CLAIMS:

1. A warming device capable of warming the distal portion of an optical instrument including a lens portion comprising:

a double walled cylindrical tube having an internal wall, external wall, upper surface and open distal portion with central cavity there between,

a protrusion extending from said upper surface, sized and shaped to receive the lens portion of said optical instrument,

a circular cap sized to attach to said distal portion of said double walled cylindrical tube,

an insulation layer between said internal wall and said external wall of said double walled cylindrical tube, and

a heating element enclosed within said central cavity and thermally coupled to said insulation layer.

2. A warming device according to claim 1 wherein said warming device is constructed from a thermoplastics type material.

3. A warming device according to claim 1 wherein said warming device is constructed from a thermoset plastics material.

4. A warming device according to any one of claims 1 to 3 wherein said protrusion comprises a plurality of steps of decreasing circumference toward the distal portion of said protrusion to provide enhanced support for said optical instrument when inserted into said warming device.

5. A warming device according to any one of claims 1 to 4 wherein said heating element comprises a conductive material.

6. A warming device according to claim 5 wherein said conductive material is water or saline solution.

7. A warming device according to claim 5 wherein said conductive material is wheat grass seeds.

8. A warming device according to claim 5 wherein said conductive material is barley grass seeds.

9. A warming device according to claim 5 wherein said conductive material is oat grass seeds.

10. A warming device according to claim 5 wherein said conductive material is rice.

11. A warming device according to any one of claims 1 to 10 wherein said heating element is heated prior to use by micro-waving said warming device.

12. A warming device according to any one of claims 1 to 10 wherein said heating element is heated prior to use by inserting said warming device into a conventional oven type surgical warmer.

13. A warming device according to any one of claims 1 to 12 wherein said insulation layer comprises air.

14. A warming device according to any one of claims 1 to 13 wherein said warming device is disposable.

15. A warming device according to any one of claims 1 to 14 wherein said double walled cylindrical tube has an attachment mechanism attached to said upper surface configured to removably attach said warming device to a surgical drape or table.

16. A warming device according to claim 15 wherein said attachment mechanism is a handle.

17. A warming device according to claim 15 wherein said attachment mechanism is a handle clip.

18. A warming device according to any one of claims 1 to 17 wherein said protrusion has a flexible grommet surrounding at least a portion of said upper surface adaptable to receive said distal portion of an optical instrument of differing size.

19. A warming device according to claim 18 wherein said flexible grommet is constructed from silicon.

20. A warming device according to any one of claims 1 to 19 wherein said protrusion has a cleaning member disposed at the distal portion.

21. A warming device according to claim 20 wherein said cleaning member is a non-woven filter type material.

22. A warming device capable of warming the distal portion of an optical instrument such as a laparoscope comprising:

a double walled cylindrical tube having an internal wall, external wall, upper surface and open distal portion with central cavity there between,

a protrusion extending from said upper surface, sized and shaped to receive the lens portion of said optical instrument,

a circular cap sized to attach to said distal portion of said double walled cylindrical tube,

an insulation layer between said internal wall and said external wall of said double walled cylindrical tube, and

a material coating said central circular protrusion.

23. A warming device according to claim 22 wherein said protrusion comprises a plurality of steps of decreasing circumference toward the distal portion of said protrusion to provide enhanced support for said optical instrument when inserted into said warming device.

24. A warming device according to claim 22 or 23 wherein said material coating is used to convert light energy to thermal energy.

25. A warming device according to any one of claims 22 to 24 wherein said material coating is black dye impregnated into said thermoplastics type material during the manufacture of said warming device.

26. A warming device according to any one of claims 22 to 24 wherein said material coating is black dye impregnated into said thermoset plastics material during the manufacture of said warming device.

27. A warming device according to any one of claims 22 to 24 wherein said material coating comprises a black plastic type cylindrical tube closed at the distal end inserted towards the distal portion of said protrusion.

28. A warming device according to any one of claims 22 to 27 wherein said insulation layer comprises air.

29. A warming device according to any one of claims 22 to 28 wherein said warming device is disposable.

30. A warming device according to any one of claims 22 to 29 wherein said double walled cylindrical tube has an attachment mechanism attached to said upper surface configured to removably attach said warming device to a surgical drape or table.

31. A warming device according to claim 30 wherein said attachment mechanism is a handle.

32. A warming device according to claim 30 wherein said attachment mechanism is a handle clip.

33. A warming device according to any one of claims 22 to 32 wherein said protrusion has a flexible grommet surrounding at least a portion of said upper surface adaptable to receive said distal portion of an optical instrument of differing size.

34. A warming device capable of warming the distal portion of an optical instrument such as a laparoscope comprising:

a double walled cylindrical tube having an internal wall, external wall, upper surface and open distal portion with central cavity there between,

a protrusion extending from said upper surface sized and shaped to receive the lens portion of said optical instrument,

a circular cap sized to attach to said distal portion of said double walled cylindrical tube,

an insulation layer between said internal wall and said external wall of said double walled cylindrical tube,

a material coating said protrusion, and

an input and an output gas tubing connector attached to said double walled cylindrical tube such that in use at least heated insufflation gas is passed through said warming device thereby warming said central cavity.

35. A warming device according to claim 34 wherein said protrusion comprises a plurality of steps of decreasing circumference toward the distal portion of said protrusion to provide enhanced support for said optical instrument when inserted into said warming device.

36. A warming device according to claim 34 or 35 wherein said material coating is used to convert light energy to thermal energy.

37. A warming device according to any one of claims 34 to 36 wherein said material coating is black dye impregnated into said thermoplastics type material during the manufacture of said warming device.

38. A warming device according to any one of claims 34 to 36 wherein said material coating is black dye impregnated into said thermoset plastics material during the manufacture of said warming device.

39. A warming device according to any one of claims 34 to 36 wherein said material coating comprises a black plastic type cylindrical tube closed at the distal end inserted towards the distal portion of said protrusion.

40. A warming device according to any one of claims 34 to 39 wherein said insulation layer comprises air.

41. A warming device according to any one of claims 34 to 40 wherein said warming device is disposable.

42. A warming device according to any one of claims 34 to 41 wherein said double walled cylindrical tube has an attachment mechanism attached to said upper surface configured to removably attach said warming device to a surgical drape or table.

43. A warming device according to claim 42 wherein said attachment mechanism is a handle.

44. A warming device according to claim 42 wherein said attachment mechanism is a handle clip.

45. A warming device according to any one of claims 34 to 44 wherein said protrusion has a flexible grommet surrounding at least a portion of said upper surface adaptable to receive said distal portion of an optical instrument of differing size.

46. A warming device according to claim 45 wherein said flexible grommet is constructed from silicon.

47. A warming device according to any one of claims 34 to 46 wherein said insufflation gas is heated prior to entering said warming device.

48. A warming device according to any one of claims 34 to 46 wherein said insufflation gas is heated and humidified prior to entering said warming device.

49. An apparatus to calibrate an optical instrument whilst warming the distal portion of an optical instrument such as a laparoscope comprising:

a double walled cylindrical tube having an internal wall, external wall, upper surface and open distal portion with central cavity there between,

a protrusion extending from said upper surface sized and shaped to receive the lens portion of said optical instrument,

a circular cap sized to attach to said distal portion of said double walled cylindrical tube,

an insulation layer between said internal wall and said external wall of said double walled cylindrical tube,

a whitening block inserted into the distal portion of said protrusion, and

a heating element enclosed within said central cavity and thermally coupled to said insulation layer.

50. An apparatus to calibrate an optical instrument according to claim 49 wherein said apparatus is constructed from a thermoplastics type material.

51. An apparatus to calibrate an optical instrument according to claim 49 wherein said apparatus is constructed from a thermoset plastics material.

52. An apparatus to calibrate an optical instrument according to any one of claims 49 to 51 wherein said apparatus said double walled cylindrical tube has a horizontal cavity extending from said external wall through said distal portion of said protrusion, sized and shaped to fit said whitening block.

53. An apparatus to calibrate an optical instrument according to claim 52 wherein said protrusion comprises a plurality of steps of decreasing circumference toward the distal

portion of said protrusion to provide enhanced support for said optical instrument when inserted into said apparatus.

54. An apparatus to calibrate an optical instrument according to any one of claims 49 to 53 wherein said heating element comprises a conductive material.

55. An apparatus to calibrate an optical instrument according to any one of claims 49 to 54 wherein said conductive material is water or saline solution.

56. An apparatus to calibrate an optical instrument according to any one of claims 49 to 54 wherein said conductive material is wheat grass seeds.

57. An apparatus to calibrate an optical instrument according to any one of claims 49 to 54 wherein said conductive material is barley grass seeds.

58. An apparatus to calibrate an optical instrument according to any one of claims 49 to 54 wherein said conductive material is oat grass seeds.

59. An apparatus to calibrate an optical instrument according to any one of claims 49 to 54 wherein said conductive material is rice.

60. An apparatus to calibrate an optical instrument according to any one of claims 49 to 59 herein said whitening block is constructed from a thermoset plastics material.

61. An apparatus to calibrate an optical instrument according to any one of claims 49 to 59 wherein said whitening block is constructed from a thermoform plastics material.

62. An apparatus to calibrate an optical instrument according to any one of claims 49 to 59 wherein said whitening block is constructed from a ceramics material.

63. An apparatus to calibrate an optical instrument according to any one of claims 49 to 59 wherein said whitening block is constructed from a non-woven material.

64. An apparatus to calibrate an optical instrument according to any one of claims 49 to 59 wherein said whitening block is constructed from a woven fibrous material.

65. An apparatus to calibrate an optical instrument according to any one of claims 49 to 64 wherein said heating element is heated prior to use by micro-waving said apparatus.

66. An apparatus to calibrate an optical instrument according to any one of claims 49 to 64 wherein said heating element is heated prior to use by inserting said apparatus into a conventional oven type surgical warmer.

67. An apparatus to calibrate an optical instrument according to any one of claims 49 to 66 wherein said insulation layer comprises air.

68. An apparatus to calibrate an optical instrument according to any one of claims 49 to 67 wherein said apparatus is disposable.

69. An apparatus to calibrate an optical instrument according to any one of claims 49 to 68 wherein said double walled cylindrical tube has an attachment mechanism attached to said upper surface configured to removably attach said apparatus to a surgical drape or table.

70. An apparatus to calibrate an optical instrument according to claim 69 wherein said attachment mechanism is a handle.

71. An apparatus to calibrate an optical instrument according to claim 69 wherein said attachment mechanism is a handle clip.

72. An apparatus to calibrate an optical instrument according to any one of claims 49 to 71 wherein said protrusion has a flexible grommet surrounding at least a portion of said upper surface adaptable to receive said distal portion of an optical instrument of differing size.

73. A warming device as herein described with reference to the accompanying figures.

74. An apparatus to calibrate an optical instrument as herein described with reference to the accompanying figures.